NPLCC Science/Traditional Ecological Knowledge Subcommittee

WebEx Meeting

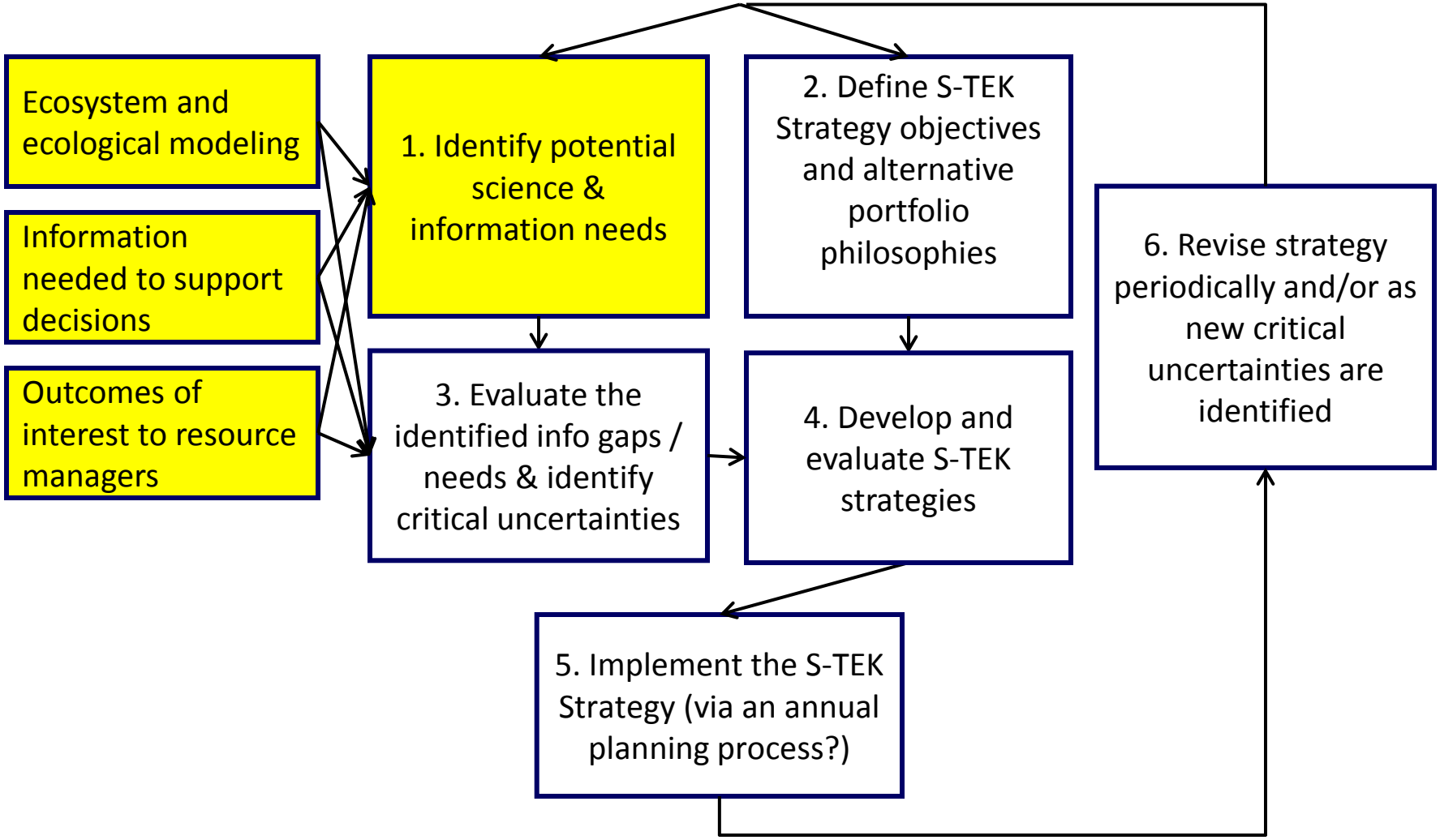
May 8, 2012

Science strategy focus

Goals for this portion of today's meeting

- **Understand / agree on how the S-TEK will identify potential science needs**
- **Establish 3-4 working groups to identify potential information needs between now and June 12-13 meeting**
- **Set the stage for June in-person meeting**

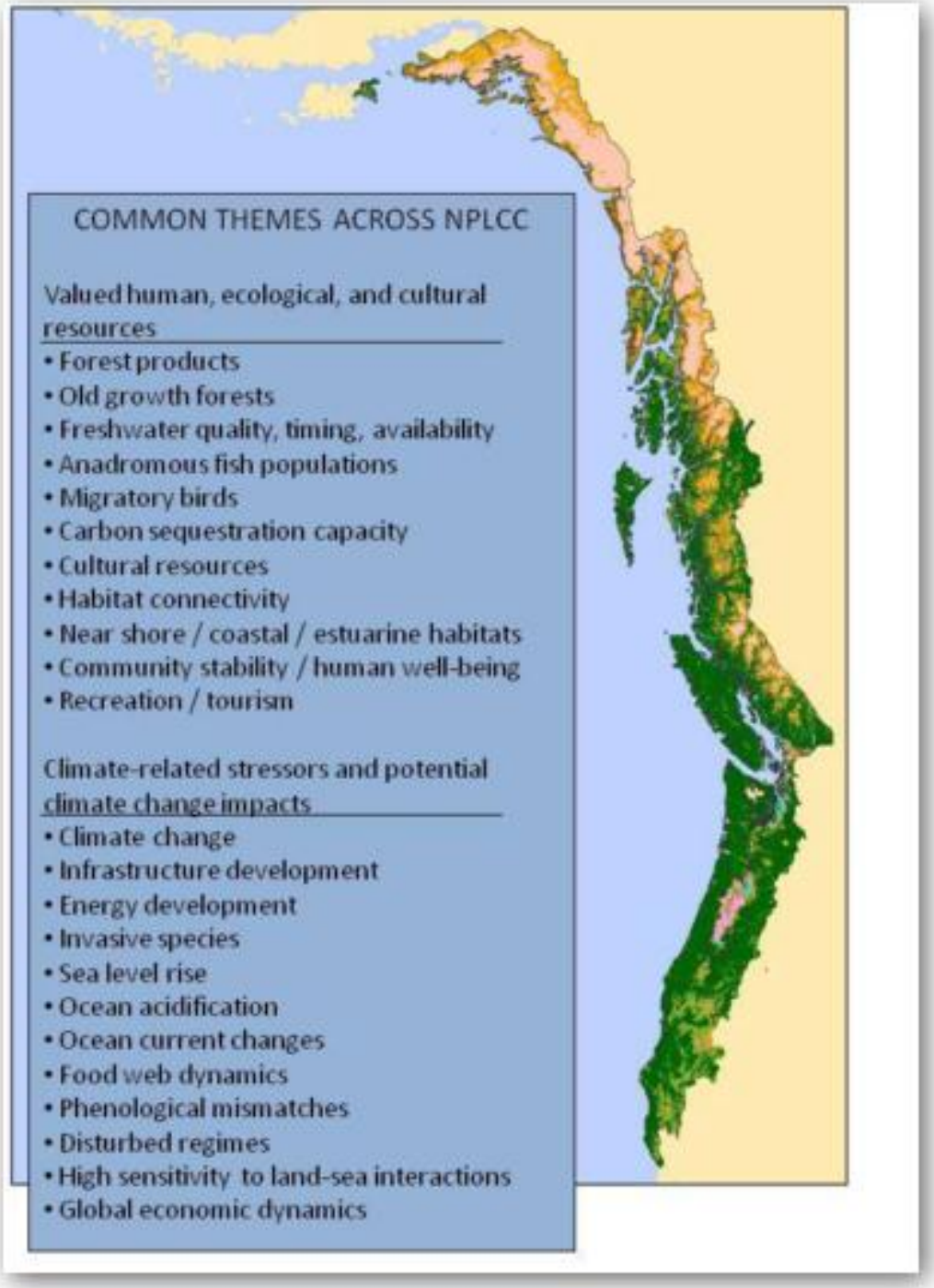
Process for developing an S-TEK strategy



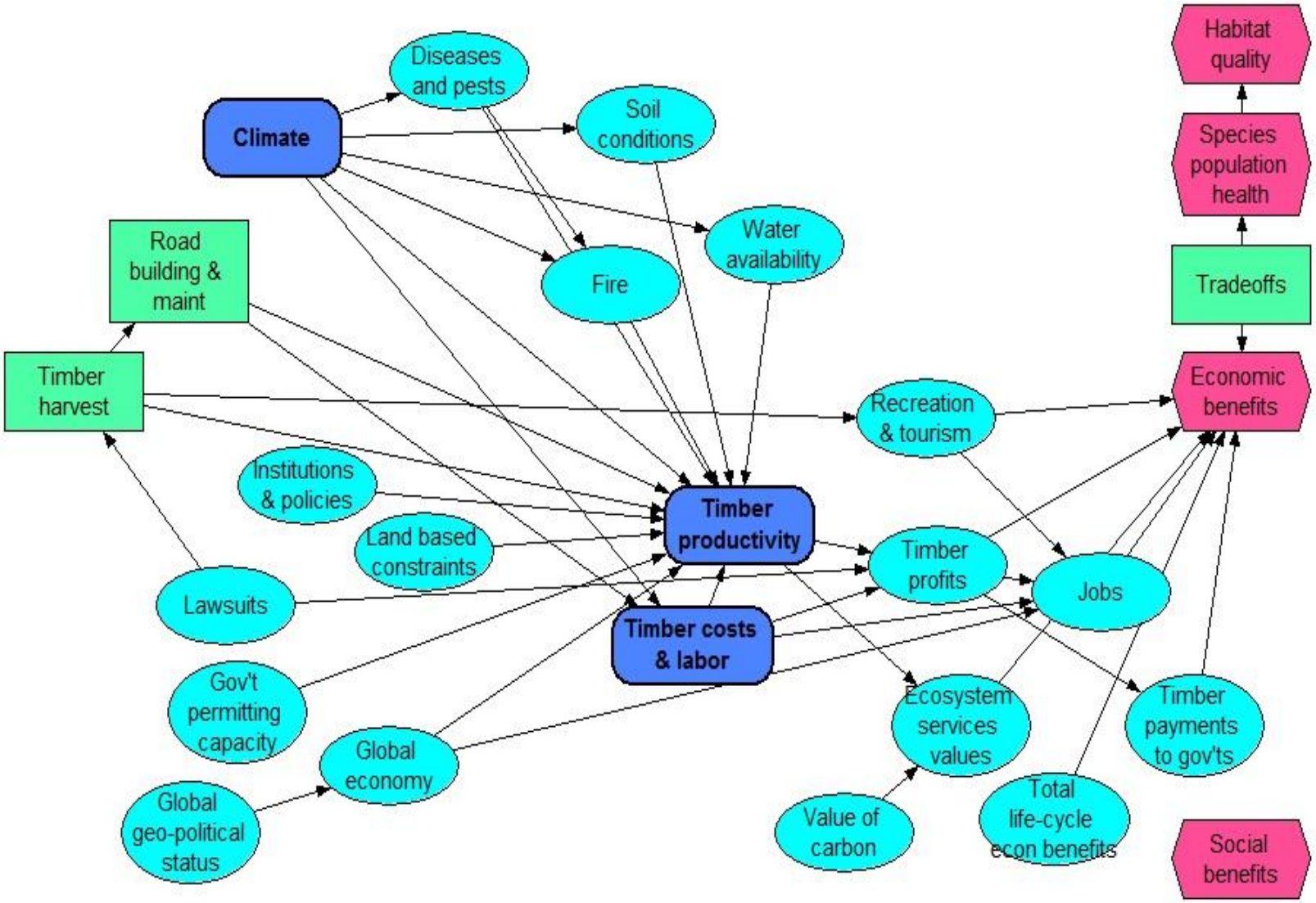
Identifying potential information needs

- **Multiple approaches are being pursued:**
  - "Common themes" from USGS ecologically-based conceptual models
  - NPLCC Steering Committee framing workshop
    - ***Decision-specific influence diagrams***
    - ***Brainstormed list***
  - National Wildlife Federation assessments
    - ***Literature reviews (Aquatic and Marine ecosystems)***
    - ***Expert workshops (Aquatic, Marine, and Terrestrial ecosystems)***
  - Review of strategies and documents from "related" science planning efforts in the NPLCC region
- **Propose that the S-TEK do some additional identification of needs**
  - Focused on resources of interest and the ecological processes affecting those resources

- **Example: common themes from biogeophysical models**



Example: decision-focused conceptual models



Example: brainstorming

Relevant decision(s)	Uncertainty (Information/Science Need)	Outcome(s) of interest
• **Education and outreach**	• Current public perceptions; effectiveness of different communication strategies	• Maximize public awareness and education
• **Restoration and mitigation decisions; nearshore**	• Effect of changes in ocean and near-shore water conditions (e.g., temperature, currents, level on the lifecycle of fish and other animal species	• Maximize habitat quality and species population health
• **Land management / forest management** • **Species management** • **Restoration and mitigation decisions**	• Effect of habitat fragmentation on species population health	• Maximize habitat quality and species population health

Example: focus groups

Early results: Web-based focus groups

- NPLCC Regional Commonalities
  1. Science Needs for Marine and Freshwater Ecosystems
  2. Need for tools
  3. Need to better coordinate information sharing and knowledge exchange
  4. Need to better facilitate cross-boundary and cross-organizational collaboration
  5. Need for improved outreach and education with public and decision makers
- NPLCC Sub-Regional Differences
  1. Need to assess impact of hydropower projects on FW systems in BC and AK
  2. Focus of work in BC and Strait of Juan de Fuca is more municipal and local *versus* federal and state elsewhere
  3. Contrast between quantity and quality of data for California Current Region's marine and freshwater systems

Challenges & path forward

- **Challenge: identify a comprehensive set of potential information needs**
  - Include perspectives of all NPLCC partners
  - Focus on *unmet* needs
- **Approach: S-TEK work in subgroups to identify additional potential needs**
  - Combine existing efforts during June meeting

Proposed process (slide 1 of 3)

- **Form 3 or 4 working groups**
- **Between now and June meeting, each group works through five steps**
  - Identify resources of management concern
  - Identify the ecological processes and drivers by which climate change may affect those resources
    - ***Consider the direction, size, and uncertainty in those effects***
  - Identify what types of management actions may be affected by or may be necessary to respond to the stressors/effects
  - Consider whether and what additional information (about the factors identified above) would help NPLCC partners make better management decisions
  - Identify which information needs are already being met and where there are gaps

Proposed process (slide 2 of 3)

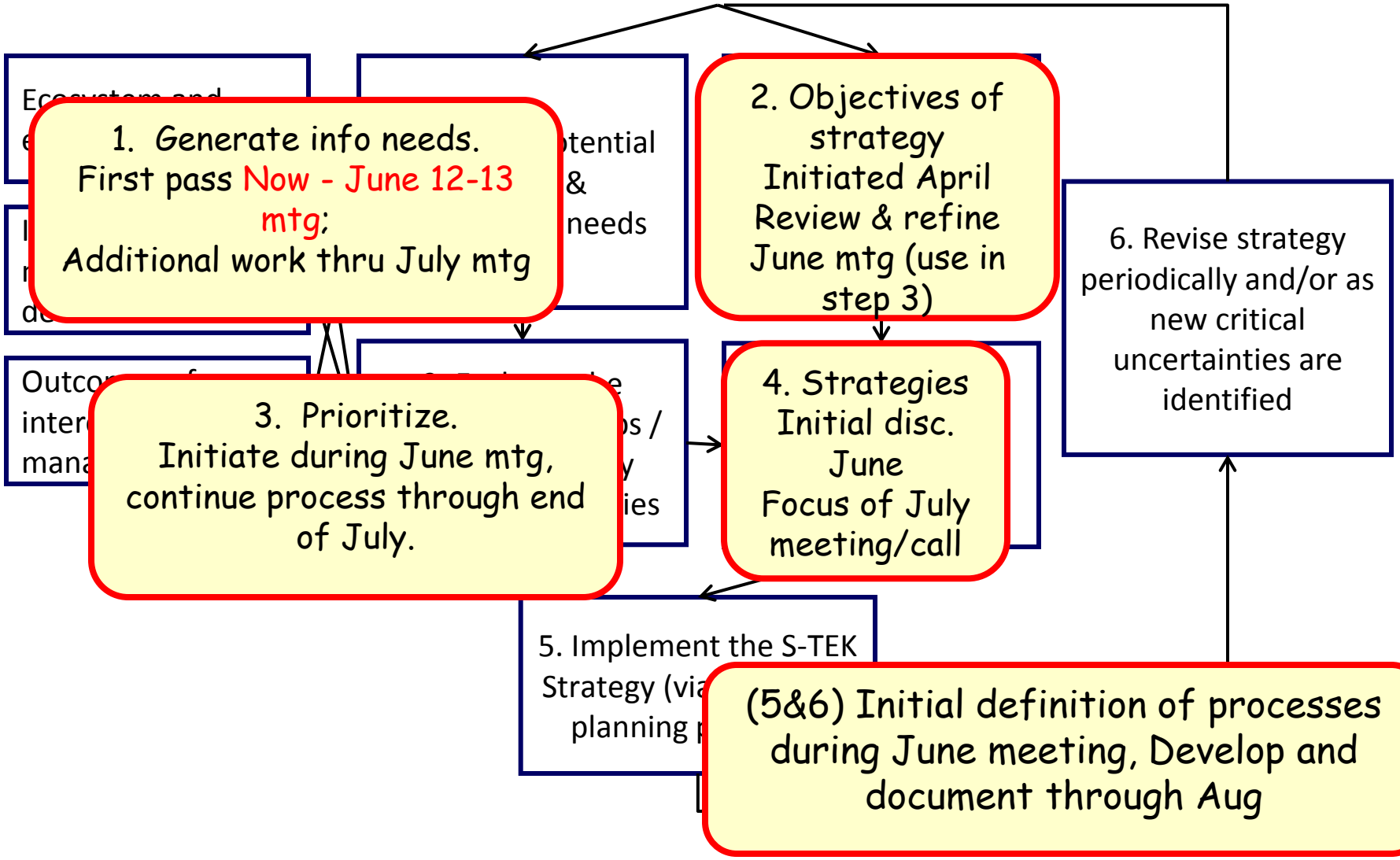
- **Working groups organized around ecosystems to parallel / complement the NWF work**
  - Freshwater resources
  - Marine and coastal resources
  - Terrestrial resources
  - Cross- or multi-ecosystem resources (?)
- **Examples (next slide)**

Example

Resource of management interest	**Ecological processes, climate change & related stressors (affecting the resource)**	**Impacts of stressors on resources**	**Knowledge/ information needs**	**Additional knowledge would improve *what types of decisions*?**
Forage fish *(within Marine and Coastal Resources)*	Sea-level rise Ocean acidification Harvest	Habitat changes; diminished, relocated populations. Subsequent impacts on other species of biological, human, and economic importance…	Predicted levels/ locations of sea-level rise Impacts of sea-level rise on forage fish Impacts of changes in forage fish populations, locations & behavior on other species of management interest	Marine mammal management Harvest management
Forests *(within Terrestrial Resources)*	Climatic –related impacts on: Fires / fire regimes Tree growth Diseases/pests	Changes in forest health and subsequent impacts on timber harvests (economic impacts), quality of forest habitats for species of management interests, availability of forest lands for cultural and recreational use and enjoyment	What forest areas will have high fire risk Climate change impacts on susceptibility to pests and diseases	Fire mgmt. planning; zoning/building / use restrictions Timber harvest locations and levels Species and habitat management
Aquatic habitats *(within Freshwater Resources)*	Hydrologic regimes	Changes in location / quality of habitats for key species Changes in numbers/ health of populations of mgmt. interest Changes in water availability for various uses (e.g, hydropower)	Future streamflows (e.g., peak, low, average volumes and timing) Effects of predicted future flows on quality, quantity, location of habitats for species of mgmt. interest	Habitat protection or restoration Management of water flow for multiple purposes (power, agriculture, environmental)

Discussion

Process for developing an S-TEK strategy



Schedule and upcoming meetings

- **Identify potential science & information needs**

Continued discussion and activity through July meeting

- **Define Science Strategy objectives and different portfolio philosophies**

Continued discussion and activity through July meeting

- **Evaluate (prioritize) the identified science and information gaps / needs**

Initiate evaluation by June meeting, continue through Aug

- **Develop and evaluate science strategies**

Initiate evaluation by June meeting, continue through Aug

- **Implement the Science Strategy (via an annual planning process?)**

Initial definition of process during June meeting, Develop and document through Aug

Task	April	May	June	July	Aug	Sept
Steering Committee calls/meetings		**May call**		**July - Aug meeting**		
Science & TEK subcommitee tasks and calls	Call wee	Call 5/8	Meeting week of 612	Call 7/10	Call 8/10	Call week of Sept 24
1. Identify potential information needs						
a. Define decision support context						
b,c. Id information gaps and unmet or partially met needs	Review existing work	Continue to identify& document potential needs		Finish identifying potential needs		
2. Define Science Plan objectives and alternative portfolio philosophies						
a. Define Science Strategy objectives and portfolio level objectives	Define/discuss/ formulate SS objectives	Develop examples (NPLCC staff and consultant)	Review strategy objectives - determine if/how they affect information prioritization			
b. Develop alternative science portfolio strategies			Define alternative S-TEK philosophies	Review philosophies, create illustr. strategies; process for alt strategies		
3. Evaluate identified information gaps						
a. Identify evaluation criteria and develop metrics	Review FY12 criteria; modify for long-term	Develop draft criteria and evaluation tool (NPLCC staff and consultant)	Test and refine criteria and evaluation tool			
b. Determine relative importance of each criterion			Develop criteria wgts if necessary			
c. Conduct evaluation			Begin evaluating identfied needs	Continue evaluating identfied needs	Finalize evaluation	
4. Evaluate and recommend an S-TEK strategy						
a. Create potential science plans by combining information priorities with portfolio philosophies			Create example portfolio; agree on process and begin full portfolio development	Continue porftolio development	Finalize portfolios	
b. Compate alternative plans					Compare and evaluate strategies; select	
c. Recommend to SC						Make recommendation
5. Define annual implementation process			Discuss annual process	Review/agree on process	Finalize write-up	
6. Strategy for updating S-TEK strategy			Discuss process	Review/agree on process	Finalize write-up	
7. Document the S-TEK Strategy			Agree on outline and writing assignments (at meeting)	Documentation	Documentation: draft for S-TEK review end of Aug	Review, update, finalize document

June meeting goals (6/13-14, Portland)

- **Significant progress on all aspects of the S-TEK Strategy**
- **Robust list of information needs, agreement on how to complete the list by the July call**
- **Evaluation of information needs**
  - Agreement of criteria and process
  - Practice with the process – evaluation of some of the identified needs
  - Agreement on how to complete the evaluation of needs before Aug(?) meeting
- **Portfolio / strategy development**
  - Clear understanding of alternative approaches that could constitute an S-TEK strategy
    - ***With illustrations***
  - Develop a process for portfolio development
    - ***Will be a focus of July call***
- **Define an annual planning process / updating process**
- **Agree on outline for the S-TEK Strategy document**
  - Discuss writing assignments

June meeting topics (6/13-14, Portland)

- **Science strategy focused!**

- **Information needs prioritization**
  - Review current status of information needs identification
  - Conduct illustrative evaluation of some of the identified needs
  - Refine the evaluation process, define how the evaluation is to be conducted over the next couple of months
- **Portfolio / strategy definition**
  - Develop and describe alternative portfolio philosophies
  - Develop illustrative portfolios
  - Develop a process for continuing the portfolio development process
- **Define an annual planning process**
- **Agree on outline for the Science Strategy document**
  - Discuss writing assignments

Thanks!

- **Comments, concerns, questions can be sent to Frank, Mary, or Karen…**